

RESTRICTED

STAT

the planners increase the quotas in accordance with the growth of labor productivity. Thus Stakhanovite achievements become a factor in planning. What is the result? First, production plans always include a quota for the lowering of production costs by speeding up production and reducing the percentage of fixed overhead costs per unit of production. Secondly, in raising labor productivity above the norm, the worker simultaneously lowers the cost of his operation.

However, is it correct to express each overfulfillment of norm in monetary terms and to give the individual workers credit for the amount of money saved? As an example, a milling-machine operator works on a bracket which demands a number of operations. The expenditure of labor for these operations, according to the approved norms for the year, is 2 norm-hours. The fixed overhead cost per norm-hour is 60 kopeks. A Stakhanovite improves the milling-machine process so that he is able to increase his output from four pieces to five. The cost of production is thus lowered by 1 ruble 20 kopeks. Shortly thereafter the milling-machine operator makes further improvements in the technological process, and increases the output to eight pieces per shift, thus lowering operational costs by 4 rubles 80 kopeks.

The planners take into account the progress of the milling-machine operator, increasing his daily quota to eight pieces. The same quota is given to a fitter who works on the next process in the manufacture of brackets and whose production schedule is based on the progress of the milling machine operator. However, at the end of a certain shift the milling-machine operator has turned out only six pieces instead of eight. The norm is exceeded and, theoretically, the shop has reduced overhead costs by 2 rubles 40 kopeks. Actually, although the norm has been exceeded, the quota has not been met, hence the milling-machine operator has disrupted the normal work of the fitters and other assembly workers who have a hand in the final processing of the item, and the output of the finished product is delayed. This example shows that workers lower overhead costs only when they fulfill and exceed quotas.

B. Variable Production Quotas

It would be incorrect for economists and accountants to consider only the planned production quotas and to disregard the norms. The norm is established for each operation. This is a constant quantity and applies equally to all. The quota is a variable quantity based on the personal success of individual workers in raising their labor productivity. If only the fulfillment of output quotas were taken into consideration, it would result in wage leveling, which should not be permitted in socialist production.

For example, two lathe operators work in a section. One fulfills the norm 200 percent; the second, less experienced worker, 125 percent. In accordance with their progress, the foreman assigns the following quotas: to the first worker, in the amount of 16 norm-hours, to the second one, in the amount of 10 norm-hours. At the end of the shift, the first worker had an output of 18 norm-hours, the second one, 12 norm-hours. Which of them was more successful in lowering production costs? It would seem that the first one produced $1\frac{1}{2}$ times more than the second. However, if the planned quota is taken as a basis, it becomes evident that both have achieved an equal saving of costs, as they both exceeded their quotas by the same percentage.

In a certain plant a milling-machine operator produced 301 norm-hours in May 1952. The production cost of this particular job was lowered by 196 rubles 51 kopeks. In the same month, another milling-machine operator produced 407 norm-hours, i.e., 106 more norm-hours than the first one.

- 2 -

RESTRICTED

RESTRICTED

STAT

However, the second worker was given credit for saving only 77 rubles 69 kopeks. A lathe operator in the same plant produced 435 norm-hours and was given credit for a cost reduction of 63 rubles 98 kopeks. A turret lathe operator who had an output of 299 norm-hours, i.e., 136 norm-hours less, had apparently achieved a saving of 452 rubles 43 kopeks. Accordingly, it would appear that more productive labor is less effective than less productive labor. This proves the fallacy of this method of "accounting."

C. Wage Rates and Workers' Qualifications as Determinants in Norm Setting

As the above described system obviously had some shortcomings, an attempt was made to introduce supplementary factors, i.e., the amount of economy was made dependent on the qualifications and wage rates of the worker, as follows:

The planned amount of fixed overhead costs was determined per ruble of workers' wages; after that, the saving in shop expenditures through overfulfillment of monthly quotas was determined.

The following example illustrates the method of calculation:

1. The fixed shop expenditures per ruble of wages constitute 1 ruble 10 kopeks.
2. The worker exceeded the monthly quota by 24 norm-hours.
3. The average cost of a norm-hour (rate plus bonus) is 2 rubles 50 kopeks.

Therefore, the amount saved equals $1.1 \times 24 \times 2.5$, i.e., 66 rubles. This example shows that overhead costs and individual workers' wages are not dependent on each other, and that all workers who exceed the norms and quotas have an equal influence on the lowering of costs, regardless of their qualifications and wage rates.

The following example demonstrates that the lowering of overhead costs per unit of production is not related to the qualifications and wage rates of individual workers.

A group of workers produces small shafts. The technological process consists of the following phases:

Facing, centering, and rough turning, performed by a lathe operator of the third wage category.

Finish turning, paid according to the fourth wage category.

Precision grinding, paid according to the sixth category. The labor expenditure on each type of operation is one norm-hour. The fixed overhead costs for the shop per norm-hour amount to 1 ruble 20 kopeks.

Let us assume that the precision grinder raises his labor productivity and turns out a shaft in 40 minutes instead of one hour. Following his example, the lathe operators also increase their output, and as a result the entire production cycle in the machining of shafts is reduced from 3 hours to 2 hours. At the same time, overhead costs per item are lowered by 1 ruble 20 kopeks. In the above example, it is not necessary to know the qualifications and wage rates of the individual workers to determine the amount of economy achieved. The reduction of costs is calculated as follows: The grinder

- 3 -

RESTRICTED

RESTRICTED

STAT

speeds up the production process by 20 minutes. If the shop expenditures per norm-hour amount to 1 ruble 20 kopeks, the cost per minute is 2 kopeks (1 ruble 20 kopeks divided by 60), and the cost for 20 minutes is 40 kopeks. The same amount of economy is obtained by each of the lathe operators.

If supplementary factors, such as workers' qualifications and wage rates, are introduced into these computations, they become needlessly complicated.

D. The Average Percentage of Norm Overfulfillment

The First Moscow Ball Bearing Plant calculated the lowering of costs from the moment when the output of the workers begins to exceed the average planned percentage of norm overfulfillment as established for the shop.

A shop has three work sectors. In the first sector the workers exceeded the established norm by an average of 120 percent, in the second by an average of 160 percent, in the third by 170 percent. The total sum, 120 plus 160 plus 170, equals 450. This sum divided by 3 equals 150 percent, which is the average percentage of norm overfulfillment.

The application of this average percentage of norm overfulfillment does not exclude the possibility of wage leveling in estimating individual achievements of workers, and it may result in placing the more efficient groups of workers at a disadvantage.

Let us assume that there are two shops. One shop has organized a Stakhanovite labor group in which the progressive norms are fulfilled on an average of 150 percent. The second shop has workers who have lagged behind, so that the average output is only 125 percent of the norm. According to the system set up at the First Moscow Ball Bearing Plant, the Stakhanovite workers are given credit for a new saving in costs only if they produce no less than 13 norm-hours, but the workers of the second shop where labor productivity is lower receive a similar credit if they produce 11 norm-hours. According to this system, which is incorrect, an economy would apparently result even if production costs had actually been raised and the fixed overhead expenditures per production unit had been increased.

For example, two lathe operators work in a group. The first one is a Stakhanovite and fulfills the norm 200 percent. The second, a non-Stakhanovite, fulfills the norm 100 percent. The average coefficient is therefore 1.5. During one shift both lathe operators have to produce an output equaling 24 norm-hours. The fixed overhead costs for this output amount to 48 rubles.

The second worker fulfilled the norm and had a gross production of 6 norm-hours. The first worker lowered his output for some reason and turned out a gross product equaling 14 norm-hours instead of 16 according to quota. The amount of fixed overhead costs is considered invariable; therefore, it is necessary to divide it by the actual output, i.e., 48 : 22, which equals 2.18 (instead of 2 rubles according to plan.) However, as per agreement, the first worker must receive credit for a saving in the amount of 4 rubles.

From the above examples it appears that neither the norm apart from the production quota, nor the production quota apart from the norm, nor the average coefficient of norm overfulfillment, taken in isolation from the norm and quota, can be considered as a basis in determining the lowering of production costs.

- 4 -

RESTRICTED

RESTRICTED

STAT

E. Suggested Method for Determining Reduction of Production Costs

Workers lower the costs of their operations by exceeding the norms, but at the same time it is obligatory that the quotas be fulfilled. The norm, which is the principal labor index, is established on the basis of technical data and observations for each type of work regardless of the person who performs it. This is an objective quantity which precludes the possibility of wage leveling in evaluating the achievements of individual workers and stimulates the growth of labor productivity.

As previously stated, the unit of measuring the expenditure of labor is the norm-hour. This is the basis of all administrative-financial and productive activities of enterprises, as well as the basis of all types of competition directed toward an increase in labor productivity and fulfillment and over-fulfillment of state plans. This quantity can be expressed not only in terms of time and volume but also in monetary terms.

For this purpose it is sufficient to divide the total sum of production expenditures by the monthly, quarterly, or semiannual plan of gross production which is expressed first of all in norm-hours. As a result, we obtain the average value of a norm-hour, from which we deduct the total of fixed overhead expenditures; this gives us a constant quantity, equal for all workers, by which production costs are lowered in the event of the overfulfillment of output norms.

Let us assume that the fixed expenditures of a shop per unit of production equaling a labor expenditure of one norm-hour amount to 1 ruble 20 kopeks. According to norm and production quota, a lathe operator must process eight items per shift. In that case the total amount of fixed overhead costs for the worker's output per shift will be 1.2×8 , i.e., 9.6 rubles.

A Stakhanovite turns out ten items instead of eight. Therefore, he lowers the fixed costs per item as follows: $9.6 : 10$, which equals 0.96 (instead of 1.2 according to plan).

Thus, the economy for each item is 0.24, i.e., 1.2 less 0.96. The Stakhanovite should in this case be given credit for an economy of 0.24×10 , i.e., 2.4, which is exactly what the overhead costs for the two items would amount to if they were not produced above the norm.

If, on the other hand, a worker turns out five items instead of eight in an 8-hour shift, the costs per unit of his production increase by 1.92 rubles ($9.6 : 5$). Consequently, the loss in production is $1.92 - 1.2 \times 5$, which equals 3.6, or exactly as much as the overhead costs for the three items he failed to produce would amount to. This method of computation is simple and accurate.

- E N D -

- 5 -

RESTRICTED